What is claimed is:

1. A magnetic garnet single-crystal film, comprising:

a lattice constant of the magnetic garnet single-crystal which does not vary or gradually decreases, and then increases in the direction in which the film grows.

2. A method for producing a magnetic garnet single-crystal film by growing a Bi-substituted magnetic garnet single crystal in a mode of liquid-phase epitaxial growth, comprising the step of:

controlling a lattice constant of the growing magnetic garnet single crystal so that the lattice constant does not vary or gradually decreases with the growth of the single-crystal film, and then increases with the growth of the single-crystal film.

3. A Faraday rotator produced by working a magnetic garnet single-crystal film formed in a mode of liquid-phase epitaxial growth, comprising:

a lattice constant A of the light-receiving surface of the magnetic garnet single-crystal film;

a lattice constant B of the light-emitting surface of the magnetic garnet single-crystal film; and

a lattice constant C of the region of the magnetic garnet

single-crystal film spaced by nearly the same distance both from the light-receiving surface of the film and from the light-emitting surface thereof;

wherein the lattice constants A, B and C satisfy the requirement, $(A + B)/2 > C$.